NEW DIANDRENA ASSOCIATED WITH OENOTHERA AND NOTES CONCERNING OTHER SPECIES

(Hymenoptera: Andrenidae)

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The andrenine subgenus *Diandrena* includes bees important in the pollination of plants of the family Onagraceae. In connection with studies of their behavior and ecology, a number of new species and subspecies were encountered and descriptions of several of these are offered in order that the names may be available for use elsewhere. In order to properly place the new species, it was necessary to examine the types of the previously named forms and to consider certain other species which, although not associated with Onagraceae, are important from the standpoint of the evolution of flower specificity in the group. Synonymical and descriptive notes concerning these are also included.[2]

CHALYBIOIDES GROUP

ANDRENA (DIANDRENA) CHALYBIOIDES (Viereck)

Parandrena chalybioides Viereck, 1904, Canadian Ent., 36:229, ♀ ♂.

Andrena (Parandrena) perchalybea Viereck, 1916, Proc. Acad. Nat. Sci., Philadelphia, 68:591, ♀. *New synonymy*

Examination of the type specimens upon which the two Viereck names were based reveals that they both represent the same species. The type of *chalybioides* is from Washington Territory, that of *perchalybea* from Corvallis, Oregon. The female has dark brown or blackish facial pubescence, mostly pale thoracic pubescence, and pale abdominal pubescence. The labral process is bilobed, the propodeal enclosure finely rugulose without distinct longitudinal ridges at base, and the mesocutal punctures are mostly separated by about two diameters. The tibial scopa is plumose and adapted for the collection of pollen from Compositae.

ANDRENA (DIANDRENA) SUBCHALYBEA Viereck

Andrena (Parandrena) subchalybea Viereck, 1916, Proc. Acad. Nat. Sci., Philadelphia, 68:593, ♀.

This species is very similar to the preceding, but the females differ in the form of the process of the labrum, which is narrower in *subchalybea* and has smaller lobes, and in the sculpturing of

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the propodeal enclosure, which is distinctly but finely, longitudinally ridged at base. The two species have a similarly plumose scopa and *A. (D.) subchalybea* also collects its pollen from Compositae. We have a series of females from Lockwood Valley, near Stauffer, Ventura County, California, May 3, 1959 (P. D. Hurd, G. I. Stage and J. R. Powers) which were taking pollen from *Agroseris sp.* We do not have the male of *chalybioides* for comparison, but the male of *subchalybea* has an unusual process of the labrum, which is somewhat spoon-shaped, with the sides elevated, polished, and straight but slightly converging.

Andrena (Diandrena) subchalybea chlorosoma

Linsley and MacSwain, new subspecies

Female and male.—Integument dull, rather than shining, as in the nominotypical subspecies, and the basal longitudinal rugae of the enclosure of the propodeum better developed, length, approximately 9 mm., ♀; 7.5 mm., ♂; anterior wing, ♀ 7 mm., ♂ 6 mm.

Holotype female (California Academy of Sciences, Entomology) from BERKELEY, CALIFORNIA, April 2, 1954, at flowers of *Ranunculus californica* (but not collecting pollen) (J. W. MacSwain); allotype male (California Academy of Sciences, Entomology), same locality, April 2, 1954, (J. W. MacSwain); and 85 paratypes, (California Insect Survey) same locality as follows:

Nineteen females between March 27 and April 30, 1954 taking nectar from *Ranunculus californicus* (J. W. MacSwain); 2 females April 1, 1956 (J. W. MacSwain); 1 female April, 1935 (G. E.:R. M. Bohart); 55 males between March 22 and April 9, 1954 mostly taking nectar from *Ranunculus californicus* (J. W. MacSwain); 1 male April 16, 1954 (H. L. Hansen); 5 males April 1, 1956 (J. W. MacSwain); and 2 males April 11 and 12, 1937 (G. E.:R. M. Bohart).

This is the form previously referred to by us as *A. (D.) purdyi* Cockerell (Linsley and MacSwain, 1959, Univ. Calif. Publ. Ent., 16(1):18), but an examination of the unique male type of the Cockerel species reveals that the two are not the same. Although this subspecies also looks superficially different from the typical *subchalybea* from southern California, the characters involved appear to represent differences of degree. We have adopted a name suggested by P. T. Timberlake.

ANDRENA (DIANDRENA) ABLEGATA (Cockerell)

Diandrena ablegata Cockerell, 1922, Amer. Mus. Novitates, 40:1, ♀.

This species is closely related to the preceding. In the female material which we have seen the facial pubescence is a mixture of dark and pale hairs, the body pubescence pale, and the tibial

scopa plumose, being adapted for the collection of pollen from Compositae. The propodeal enclosure is coarsely, irregularly rugulose, the labral process distinctly notched, and the mesoscutal punctures mostly separated by a single diameter or less. The examples which we have seen are all from Wyoming.

ANDRENA (DIANDRENA) NOTHOCALAIDIS (Cockerell)

Diandrena nothocalaidis Cockerell, 1905, Proc. Biol. Soc. Washington, 18:183, ♀ ♂.

A. (D.) nothocalaidis is closely related to *chalybioides* and *ablegata*, the female differing from both in the deeply divided process of the labrum and the less dense punctation of mesoscutum (a high percentage of the punctures separated by three diameters or more). From *chalybioides* it further differs in the coarsely, irregularly rugulose enclosure of the propodeum and from *ablegata* by the black facial pubescence. We have only one example, from Boulder, Colorado. The plumose scopa is appropriate for the collection of pollen from Compositae.

Andrena (Diandrena) evoluta

Linsley and MacSwain, new species

Female.—Integument dark blue, elevated portions of abdominal tergite greenish, basal antennal segments black, apical two-thirds of flagellum reddish-brown beneath; pubescence black or dark brown except for the long pollen-holding hairs of the outer or ventral surface of the posterior femora and tibiae and a somewhat lunular row of long erect hairs at base of metasoma. *Head* tessellate and moderately densely punctate but shining; clypeus without a median impunctate line; labrum with apex of process deeply incised and bilobed, the lobes elevated, polished and separated. *Mesosoma* with mesoscutum very feebly shining, minutely tessellate, the superimposed punctures separated by from one to three diameters; mesoscutellum and metanotum similarly sculptured but the latter more densely punctate; propodeum tessellate and rugosopunctate, the basal enclosure regularly, longitudinally ridged; wings tinted with pale brownish; posterior legs with tibial scopa composed of moderately long, apically directed hairs, outer dorsal portion of scopa about as wide as tibia, plumosity of hairs unilateral, or occasionally bilateral with both branches directed in the same direction, elongate, suberect and often recurved apically. *Metasomal* terga rather uniformly sculptured over basal elevation and apical depression. Length, approximately 9 mm., anterior wing, 6.5 mm.

Holotype female (California Academy of Sciences, Entomology) from 6.5 MILES NORTH OF TERMO, LASSEN COUNTY, CALIFORNIA, June 21, 1959, collecting pollen from *Oenothera tanacetifolia* between 7:45 and 8:00 a.m. P.S.T.[3] (G. I. Stage). Paratypes (California Insect Survey) 16 ♀♀, same locality and date, between

6:30 and 8:30 a.m. (G. I. Stage) (all bearing *Oenothera* pollen on the tibial scopa or femoral floccus but only a few with pure pollen loads); 11 ♀♀, same locality, June 9 to 11, 1960, most collecting pollen from *Agoseris glauca* (G. I. Stage and R. W. Thorp); 16 ♀♀, same locality, June 23, 1960, most collecting pollen from *Agoseris glauca* (J. W. MacSwain); 14 ♀♀, 5.5 and 7 miles north of Termo, June 23, 1960, all on *Agoseris glauca* (J. W. MacSwain); and 8 ♀♀ from 2 miles north of Ravendale, Lassen County, California, June 10, 1960, most collecting pollen from *Agoseris glauca* (G. I. Stage). Other specimens which appear assignable to this species but are not designated as paratypes are 46 females from 2.5 miles east of Austin Summit, Lander County, Nevada on June 6, 1960 (E. G. Linsley and J. W. MacSwain). Most were gathering pollen from the introduced common dandelion, *Taraxacum officianale.*

The female of this species differs from those of the three preceding in the form of the tibial scopa and the nature of the hairs which comprise it and also in the sculpturing of the basal enclosure of the propodeum, which is regularly, longitudinally ridged. It appears to be closest to *A. (D.) nothocalaidis* (Cockerell).

Andrena (Diandrena) apasta Linsley and MacSwain, new species

Female.—Integument dark violaceous blue, antennae black; pubescence predominantly dark, that of face blackish, of thoracic dorsum dark brown with some pale hairs posteriorly, of abdomen dark brown and much longer on first two metasomal tergites than on third and following. *Head* densely punctate but shining, especially below antennal insertions; clypeus without a median impunctate line; labrum with apex of process very shallowly emarginate, the angles broadly rounded. *Mesosoma* with mesoscutum feebly shining, minutely tessellate, the superimposed punctures mostly separated by from two to three or more diameters; mesoscutellum and metanotum similarly sculptured but more densely punctate; propodeum tessellate and punctate, the basal enclosure coarsely, irregularly rugulose, posteriorly, more regularly at base; wings lightly tinted with brownish; posterior legs with tibial scopa composed of long, coarse hairs mostly from 2.5 to 3 times as long as width of tibiae, those of inner (ventral) surface, simple with apex slightly recurved, those of outer (dorsal) margin less coarse, plumosity unilateral, short, decumbent, straight. *Metasomal* terga rather uniformly sculptured over anterior elevation and posterior depression, surface very feebly shining; metasomal sterna brownish, a little more shining than terga and more coarsely punctate. Length, approximately 10 mm.; anterior wing, 7 mm.

Holotype female (California Academy of Sciences, Entomol-

[3] All times reported in this paper are Pacific Standard Time.

ogy) from FIVE MILES SOUTHWEST OF SHANDON, SAN LUIS OBISPO COUNTY, CALIFORNIA, April 11, 1960, collecting pollen from *Oenothera dentata* at 7:33 a.m. (E. G. Linsley) and 53 ♀♀ paratypes (California Insect Survey) from the same locality at flowers of *Oenothera dentata* between 7:29 a.m. and 7:56 a.m. (E. G. Linsley and Juanita M. Linsley). Additional specimens, not designated as paratypes, include a female from 1 mile west of Little Rock, Los Angeles County, California, April 5, 1959, on *Oenothera micrantha* var. *exfoliata* at 8:56 a.m. (E. G. Linsley) and five females from Ventucopa, Santa Barbara County, California, March 21, 1959, in tunnels in the ground (R. P. Allen). Two females from Hungry Valley, 5 miles south of Gorman, Ventura County, California, May 7, 1959, collecting pollen from *Oenothera dentata* at 6:13 a.m. and 6:30 a.m. (J. R. Powers and G. I. Stage) differ by having the abdomen green instead of violaceous blue and may represent a closely related species or subspecies.

The female of this species superficially resembles other members of the *chalybioides-nothocalaidis* complex but differs in the form of the tibial scopa and the hairs which comprise it, the shallowly emarginate process of the labrum, and the presence of long hairs on both the first and second metasomal terga. It is also the most completely violaceous of the known members of this group.

ANDRENA (DIANDRENA) OLIVACEA Viereck

Andrena (Parandrena) olivacea Viereck, 1916, Proc. Acad. Nat. Sci., Philadelphia, 68:590, ♀ ♂.

This is a relatively common and widespread species associated with ephemeral spring Compositae on the Mojave and Colorado deserts of Southern California and adjacent areas. We have most frequently found it collecting pollen from *Malacothrix* and *Coreopsis*, usually in the latter part of the morning. In the early morning, 7:30–8:00 a.m., both sexes visit these and other plants for nectar, including *Oenothera dentata*. The female may be readily distinguished from other members of the *chalybiodis* group by the all-white facial pubescence and very feebly tessellate, shining, mesoscutum. The apex of the labral process is bilobed, the lobes globular and distinctly separated. The enclosure of the propodeum is finely rugulose with a distinct median longitudinal elevated line. The male is also much more obscurely tessellate and shining than those of the other species known to us and the process of the labrum is broad, deeply notched, and bilobed.

CYANOSOMA GROUP

ANDRENA (DIANDRENA) CYANOSOMA (Cockerell)

Diandrena cyanosoma Cockerell, 1916, Pomona Jour. Ent. Zool., 8:49, ♀ ♂.
Andrena (Parandrena) austrocalifornica Viereck, 1916, Proc. Acad. Nat. Sci., Philadelphia, 68:587, ♀. *New synonymy*

Examination of the types upon which these two names were based reveals that they represent a single species. *A. (D.)* CYANOSOMO collects pollen from *Oenothera* early in the morning. Females captured on April 23, 1959, 7 miles east of Temecula, Riverside County, California, were taking pollen from *Oenothera bistorta* var. *veitchiana* at 6:47 a.m. (Peter H. Raven).

ANDRENA (DIANDRENA) MACSWAINI Linsley

Andrena (Diandrena) macswaini Linsley, 1960, Pan-Pacific Ent., 36:97, ♀ ♂.

This species is closely related to *A. (D.) cyanosoma* (Cockerell), but differs in both sexes by the slightly less bluish integument, stronger, denser, and less regular sculpturing. The female further differs in the distinct, complete hair bands of abdomen, the irregular mesonotal pubescence and the longer erect hairs of the first metasomal terga. The male also differs further from that of *cyanosoma* by the all-white facial hairs and the very long hairs of the abdomen. *A. (D.) macswaini* collects pollen in the mornings from *Oenothera dentata*. We have found it thus far only in the southern part of the San Joaquin Valley, California.

Andrena (Diandrena) anatolis

Linsley and MacSwain, new species

Female.—Integument feebly shining, green, without bluish or violaceous reflections except on metasomal sternites and toward apex of clypeus, antennae brownish-black, dark red brown beneath, legs dark brown; pubescence white on clypeus, black or dark brown near eyes, antennae, and vertex, fimbria pale, tibial scopa predominantly pale, abdominal hair bands distinct, more or less complete. *Head* tessellate, shining; frons finely, longitudinally striate; clypeus finely punctate, sparsely pubescent, with an indication of a median elevated longitudinal, impunctate line; labrum with apical process very feebly emarginate and tumid at apex. *Mesosoma* with metanotum tessellate and indistinctly punctured, pubescence moderately short, dense, heavily plumose, a few long hairs on disk, mesoscutellum and metanotum more densely and distinctly reticulate-punctate; propodeum reticulate, enclosure poorly defined, less coarsely sculptured than adjacent areas, weakly, irregularly rugulose basally; wings tinted with pale brownish; posterior legs with tibial scopa moderately long, loose, the hairs pale, simple, and posteriorly directed beneath, dorsally a little denser, darker, and predominantly simple, a little longer than the width of the tibia above. *Metasoma* dull, finely, regularly tessellate,

punctures of first tergum indistinctly punctate, the punctures separated by from three to six diameters, pubescence moderately short, erect on first tergum, more or less appressed on following terga, apical hair bands successively more distinct on terga two to four, fifth tergum coarsely punctate; metasomal sterna shiny, finely punctate, thinly pubescent, posterior margins with a row of long, pale, suberect hairs. Length, approximately 6.5 mm., anterior wing, 5.7 mm.

Male.—Integument moderately shining, green, apices of depressed margins of third and fourth metasomal terga pale brownish; length approximately 5.5 mm.; anterior wing, 4.7 mm.

Holotype female (California Academy of Sciences, Entomology), from 7 MILES EAST OF TEMECULA, RIVERSIDE COUNTY, CALIFORNIA, April 23, 1959, collecting pollen from *Oenothera bistorta* var. *veitchiana* at 7:04 a.m. (Peter H. Raven); allotype male (P. H. Timberlake collection), from Riverside, Riverside County, California, March 4, 1932, sunning on ground (P. H. Timberlake). Paratypes, one female taken under the same conditions as the holotype at 7:29 a.m. (Peter H. Raven), two females from Claremont, Los Angeles County, California, April 17, 1959, taking pollen from *Oenothera bistorta* var. *veitchiana* at 8:10 and 8:30 a.m. (P. H. Raven), 6 males from Mira Loma, Riverside County, California, March 12, 1939 on *Ceanothus crassifolius* (R. C. Dickson), 10 females from Dripping Springs Guard Station (10 miles east of Temecula), Riverside County, California, March 22, 1960, at *Oenothera* between 9:10 and 9:25 a.m. (W. M. Klein), one female 9 miles north of Perris, Riverside County, California, April 10, 1946, on ground at burrow (P. H. Timberlake), one female from The Gavilan, Riverside County, California, March 6, 1935, on *Oenothera dentata* (C. M. Dammers), one female from Riverside, Riverside County, California, March 15, 1925, at cherry bloom (P. H. Timberlake), one female from Riverside, Riverside County, California, April 26, 1935, on *Oenothera dentata* (P. H. Timberlake), and 45 males from Riverside, Riverside County, California, various dates in February and March between 1928 and 1938 mostly at flowers of *Calandrinia Menziesii* or *Cryptantha intermedia* (P. H. Timberlake). Other specimens which appear assignable to this species but which have not been designated as paratypes are as follows: One female from Hungry Valley five miles south of Gorman, Ventura County, California, taking pollen from *Oenothera dentata* at 7:02 a.m. (G. I. Stage) and one female from Ventura, Ventura County, California, April 19, 1959, taking

pollen from *Oenothera cheiranthifolia suffrucicosa* at 8:39 a.m. (P. H. Raven).

This species is smaller than either of the preceding and readily distinguished by the green rather than bluish coloration, the entire, feebly emarginate apex of the labral process, the poorly defined and weakly sculptured basal enclosure of the propodeum, the shallow punctation of the mesoscutum and first metasomal tergum, etc.

Andrena (Diandrena) anatolis matutina

Linsley and MacSwain, new subspecies

Female.—Integument shining; pubescence of head black or dark brown; labrum with apical process distinctly, evenly emarginate; length approximately 8 mm.; anterior wing 6 mm.

Male.—Integument shining, olive green, apices of depressed margins of third and fourth metasomal terga pale brownish; labrum with apical process broadly, evenly emarginate, somewhat bilobed; length approximately 6.5 mm.; anterior wing 5 mm.

Holotype female (California Academy of Sciences, Entomology) from 4.5 MILES SOUTH OF TULARE, TULARE COUNTY, CALIFORNIA, March 29, 1960, collecting pollen from *Oenothera dentata* var. *campestris* at 8:58 a.m. (J. W. MacSwain); allotype male (California Academy of Sciences, Entomology) from Tulare, Tulare County, California, March 9, 1939, taking nectar from *Amsinkia* (E. G. Linsley).

Paratypes (California Insect Survey and University of California, Riverside: 12 females same data as holotype, 1 male same data as allotype, 1 female from Tulare, Tulare County, California, April 29, 1960, gathering pollen from *Oenothera dentata* var. *campestris* (J. W. MacSwain), 3 females from 2.4 miles south of Tipton, Tulare County, California, March 29, 1960, gathering pollen from *Oenothera dentata* var. *campestris* (E. G. Linsley), 1 female from 20 miles east of Bakersfield, Kern County, California, April 19, 1958, at flowers of *Oenothera decorticans* but not collecting pollen (E. G. Linsley), 3 males from Tulare, Tulare County, California, March 9, 1937, at flowers of *Calandrinia* (P. H. Timberlake), 1 male from Earlimart, Tulare County, California, March 9, 1937, at flowers of *Calandrinia* (P. H. Timberlake).

Additional specimens, which are not designated as paratypes, are the following: one female from 2 miles southwest of Livingston, Merced County, California, April 4, 1959, at flowers of *Oenothera dentata* var. *campestris*, (G. I. Stage), and 2 males, 29 females from 2.5 miles south of Livingston, Merced County, California, between March 20 and April 6, 1960, at flowers of *Oenothera dentata var. campestris* (G. I. Stage and R. R. Snelling). Females from near Livingston differ in having the hairs of the face an intermixture of dark and pale hairs.

Andrena (Diandrena) eothina

Linsley and MacSwain, new species

Female.—Integument dark blue, feebly shining, metasomal terga with a greenish caste over elevated portions, legs, antennae, and clypeus (except base), dark brownish-black; pubescence of head (including face) dark brown, of thorax predominantly dark brown, of abdomen predominantly pale. *Head* tessellate, feebly shining, frons finely, longitudinally striate; clypeus shallowly but moderately densley punctate, without a median longitudinal impunctate line, pubescence thin, labrum with apical process deeply, angularly notched at apex, the lobes moderately small, tumid, divergent. *Mesosoma* with mesonotum dull, tessellate, distinctly punctate, the punctures mostly separated by less than a diameter, pubescence short, sparse, pale, densely plumose, with scattered long erect pale and dark hairs of unequal length intermixed; mesoscutellum and metanotum successively more densely punctate; propodeum reticulate-rugulose, the basal enclosure indistinctly margined, less coarsely sculptured than adjacent areas, a number of distinct longitudinal rugulae at base; wings tinted with pale brownish; legs with tibial scopa moderately long, thin, ventral hairs pale, mostly recurved slightly at apex, dorsal hairs suberect, much longer than width of tibia, mostly simple, a few sparsely plumose. *Metasoma* with first tergum finely, regularly tessellate, finely, indistinctly punctate, the punctures separated by from one to four diameters, pubescence sparse, moderately long, erect; terga two to four finely, more or less transversely rugulose over elevated portions, pubescence pale, moderately short, suberect, apical hair bands indistinct (worn); anal fimbria brownish; metasomal sterna shining, distinctly punctate, thinly pubescent, posterior margins with a row of long, pale, suberect hairs. Length, approximately 7 mm., anterior wing, 5.5 mm. (worn).

Male.—Integument of head green, of thorax and mesosoma green with bluish reflections, of propodeum violaceous; facial hairs long, white, covering clypeus, a few dark hairs near eye; metasomal hairs long, white, not exceeding length of terga. Length approximately 6 mm., anterior wing, 5 mm.

Holotype female (California Academy of Sciences, Entomology), from 18 MILES EAST OF BAKERSFIELD, KERN COUNTY, CALIFORNIA, April 20, 1958, taking pollen from *Oenothera dentata*, between 6:40 and 6:50 a.m. (E. G. Linsley), *allotype male* (California Academy of Sciences, Entomology) from the same locality, March 6, 1960, taking nectar from *Oenothera dentata* at 9:10 a.m. (E. G. Linsley); paratypes, two females from the same locality, April 11, 1958, taking pollen from *Oenothera dentata* between 6:45 and 8:00 a.m. (E. G. Linsley and J. W. MacSwain), and one male and 25 females from the same locality, between March 6 and April 3, 1960, taking nectar or pollen from *Oenothera dentata* (E. G. Linsley and J. W. MacSwain).

The female of this species differs at once from other members of the *cyanosoma* group by the dark blue integument, wholly dark facial hairs, and the sculpturing of the mesoscutum, propodeum, and abdomen. The male differs by having the metasomal hair bands distinct, suggesting that their indistinctness in the type is due to wear.

SPERRYI GROUP

ANDRENA (DIANDRENA) SPERRYI (Cockerell)

Diandrena sperryi Cockerell, 1937, Amer. Mus. Novitates, 948:14, ♀.

This species collects pollen in the morning from *Oenothera* on the western Mojave Desert and southern San Joaquin Valley, California. Our material includes the following:

Twenty ♀♀, Boron, Kern County, California, April 2 and 3, 1959, collecting pollen from *Oenothera dentata* var. *parishii* between 6:30 and 7:45 a.m. (E. G. Linsley and J. W. MacSwain); 13♀♀, same locality, April 10 and May 7, 1960, collecting pollen from *Oenothera dentata* var. *parishii* between 7:00 and 8:00 a.m. (E. G. Linsley and J. W. MacSwain); 4 ♀♀, 2 miles southwest of Livingston, Merced County, California, April 4 and 5, 1959, collecting pollen from *Oenothera dentata* var. *campestris* between 8:12 and 9:10 a.m. (G. I. Stage); 7 ♀♀ and 1 ♂ same locality, April 10, 1960, collecting pollen from *Oenothrea detata* var. *parishii* between 8:20 and 10:30 a.m. (G. I. Stage); 13 ♀♀, Short Canyon, 6 miles west of Inyokern, Kern County, California, April 13 and 14, 1960, collecting pollen from *Oenothera dentata* var. *johnstonii* between 7:45 and 9:16 a.m. (J. A. and J. W. MacSwain); 4 ♀♀, 7.2 miles northwest of Walker Pass Summit, Kern County, California, April 25, 1960, collecting pollen from *Oenothera dentata* between 10:17 and 11:05 a.m. (D. D. Linsdale); 2 ♀♀, Hungry Valley, 5 miles south of Gorman, Ventura County, California, May 7, 1959 (J. R. Powers); 19 ♀♀, 4 ♂♂, 2.5 miles south of Livingston, Merced County, California, March 20 to 26 and April 2 and 6, 1960, collecting pollen from *Oenothera dentata* var. *campestris* (G. I. Stage and R. R. Snelling); 2 ♀♀, 2 ♂♂, 18 miles east of Bakersfield, Kern County, California, April 11 and 20, 1960, visiting flowers of *Oenothera dentata* var. *parishii* (E. G. Linsley and J. W. MacSwain); 4 ♂♂, 5 miles west of Lancaster, Los Angeles County, April 11, 1958 (E. G. Linsley and J. W. MacSwain); 5 ♂♂, 5 miles south of Lancaster, Los Angeles County, California, April 11, 1958 (J. W. MacSwain); one male, 15 miles east of Kramer Junction, San Bernardino County, California, April 12, 1958 (J. W. MacSwain); 4 ♀♀, Kramer Hills, San Bernardino County, California, May 1, 1958 (P. D. Hurd and G. A. Marsh); 2 ♀♀, one mile west of Kramer, San Bernardino County, California, April 2, 1959, one taking pollen from *Oenothera dentata* var. *parishii* at 8:52 a.m., the other visiting *Oenothera clavaeformis* at 8:05 a.m. but bearing a pure load of pollen from *Oe. dentata* var. *parishii* (E. G. Linsley), 3 ♀♀, five miles west of Salt Wells, San Bernardino County, California, April 1,

1959, gathering pollen from *Oenothera dentata* var. *parishii* at 8:08 a.m. (R. W. Thorp), and 11 ♀♀, one mile west of Little Rock, Los Angeles County, California, April 4, 5, 13, 1959, collecting pollen from *Oenothera micrantha* var. *exfoliata,* between 7:14 a.m. and 9:25 a.m. (E. G. Linsley, J. W. MacSwain, P. H. Raven).

This a very small, slender, shining species with pronounced bands of metasomal pubescence.

A NEW STATE RECORD FOR THE BEE GENUS HETERANTHIDIUM WITH COMMENTS ON H. ZEBRATUM CRESSON[1]

(Hymenoptera: Apoidea)

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Heteranthidium zebratum subtimberlakei Schwarz, from Nevada County, California, represented the previously recorded northern limit of the genus *Heteranthidium* in western America (Schwarz, 1928). A series of 40 females of *Heteranthidium zebratum* was collected five miles west of Suttle Lake, Oregon, July 30, 1939, by Schuh and Gray. The abundance of specimens from this locality would suggest that the species probaby occurs north of Suttle Lake in the higher elevations of the Cascades.

The variability in body maculation and punctation is so great among the 40 specimens, that typical forms of both *zebratum subtimberlakei* and *z. zebratum* occur within the series. The subspecies *z. subtimberlakei* was based on a single female and distinguished from the other subspecies by: the absence of the supraclypeal spot, maculations on the scutellum, and femoral stripes; two broadly interrupted maculations on the sixth metasomal tergum; the larger maculations behind the compound eyes extending towards the lateral ocelli; and by having the inner orbital margins unmistakably convergent above.

Except for the convergence of the inner orbital margins above and the extension of the maculations toward the lateral ocelli, the specimen of *subtimberlakei* could be included among the variants of the polymorphic *z. zebratum.*

The degree of maculation variability among the 40 specimen collected at Suttle Lake, Oregon, is recorded in the following paragraph. The comments are restricted to those characteristics previously used in taxa discrimination within the genus.

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